

## **How LCM Can Contribute in Delivering Value to Customers; the Issue of Functionality**

Value Stream Management (VSM) or Value Stream Engineering (VSE) is focusing on the most efficient way to deliver value to customers. Those concepts, enhancing quality and lowering cycle times have industrial grounds within Supply Chain Management (SCM). In Life Cycle Management (LCM), we try to do exactly the same: managing production stages through a product or service Life Cycle (LC) in order to lower its cumulative environmental burden to ideally create high quality products or services (do more with less). Than why is it that Life Cycle Assessment (LCA) studies and in general LCM studies often end up on the shelf? Why is it LCA and LCM often fail to convince business developers of their business relevance? A possible answer to both questions was shown to be related to the setting of the Functional Unit (FU) within the goal and scope phase of an LCA. An end producer is no longer interested in its environmental impact represented as 'per kg', 'per mole', 'per tablet', etc. for the simple reason that these FUs do not reflect the value of a certain product or service for consumers. The Functional Unit (FU) should exactly refer to the value that customers extract out of the product/service. In many cases, we are not there yet. E.g. the functional unit of many LCAs on chemicals or pharmaceuticals is commonly represented as per mass unit. The patient's value is the therapeutic treatment effect and – hopefully – healing effect. However, when taking treatment and healing effects into account an interdisciplinary approach towards LCA methodologies, biochemistry, toxicity, etc. is required. The same reasoning can be applied to the textile sector which aims at producing textile with very specific properties (textile strength, fibre chemistry, etc.) and more or less every industrial activity. The oral presentation will present several case studies demonstrating that defining the proper FU beyond common LCA or LCM boundaries enhances business relevance of LCA results. One should expand the view on functionalities and prolong cause-effect chains within LCA from a multidisciplinary point of view in order to meet customer compliance and value delivery. Moreover, the authors want to focus on plausible bottlenecks in answering research questions towards functionalities, product properties and customer compliance in general. This as a first step towards integration of LCM in business administration, emerging business models and policy making on a wider scale.